

111.7 Soils, Sediments, and Sludges (powder form)

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PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM Description	1646a Estuarine Sediment	1648 Urban Particulate Matter	1944 New York/New Jersey Waterway Sediment	2586 Trace Elements in Soil/Lead Paint	2587 Trace Elements in Soil/Lead Paint	2702 Inorganics in Marine Sediment	2703 Sediment for Solid Sampling (Small Sample)	2709** San Joaquin Soil	2710** Montana Soil Highly Elevated Traces	2711** Montana Soil Moderately Elevated Traces	2780 Hard Rock Mine Waste	2781** Domestic Sludge	2782** Industrial Sludge	8704 Buffalo River Sediment
Unit Size	70 g	2 g	50 g	50 g	50g	50 g	5 g	50 g	50 g	50 g	50 g	40 g	70 g	50g
Element	(Concentrations are in mass fractions, in mg/kg, unless noted by an asterisk for %)													
Aluminum	2.297*	3.42*	5.33*	6.652*	5.86*	8.41*	0.0833	7.50*	6.44*	6.53*	8.87*	1.6*	1.37*	6.10*
Antimony	(0.3)	(45)	(5)			5.60	5.62	7.9	38.4	19.4	(160)		(2.0)	3.07
Arsenic	6.23	115	18.9	8.7	13.7	45.3	45.5	17.7	626	105	48.8	7.82	166	(17)
Barium	(210)	(737)		413	568	397.4	416	968	707	726	993		254	413
Beryllium	(< 1)		1.6	(1.4)	(9.2)	(3.0)								
Bromine		(500)	86			---			(6)	-5				
Cadmium	0.148	75	8.8	2.71	1.92	0.817	0.811	0.38	21.8	41.7	12.1	12.78	4.17	2.94
Calcium	0.519*		1.0*	2.218*	0.927*	0.343*	(0.31%)	1.89*	1.25*	2.88*	0.195*	3.9*	0.67*	2.641*
Carbon (total)						(3.36)*		(1.2*)	(3*)	(2*)			(2.1)*	3.351*
Carbon (organic)						(3.27)*								
Cerium	(34)	(55)	(65)	58	(57)	123.4	125.5	(42)	(57)	(69)	(64)		1240	66.5
Cesium		(3)	3			(7.1)	(7.7)	(5.3)	(107)	(6.1)	(13)			5.83
Chlorine		(0.45)*	1.4*											
Chromium	40.9	403	266	301	92	352		130	(39)	(47)	(44)	202	109	121.9
Cobalt	(5)	(18)	14	(35)	(14)	27.76	27.7	13.4	(10)	(10)	(2.2)		66.3	13.57
Copper	10.01	609	380	(81)	(160)	117.7	(120)	34.6	2950	114	215.5	627.4	2594	
Dysprosium				(5.4)				(3.5)	(5.4)	(5.6)				
Erbium				(3.3)										
Europium		(0.8)	(1.3)	(1.5)				(0.9)	(1)	(1.1)			(0.34)	1.31
Gadolinium				(5.8)										
Gallium	(5)			(14)	(13)	24.3		(14)	(34)	(15)	(26)		35	

Germanium														
Gold			(0.1)					(0.3)	(0.6)	(0.03)	(0.18)		(2.2)	
Hafnium	(4.4)					(12.6)	(11.8)	(3.7)	(3.2)	(7.3)	(4.4)		(0.77)	8.4
Holmium				(1.1)				(0.54)	(0.6)	(1)	(0.84)			
Indium	(1)								(5.1)	(1.1)			238	
Iodine		(20)						(5)		-3				
Iron (total)	2.008 *	3.91*	3.53*	5.161*	2.813*	7.91*	0.0738	3.50*	3.38*	2.89*	2.784	2.8*	26.9*	3.97*
Lanthanum	(17)	(42)	(39)	29.7	(29)	73.5	75.9	(23)	(34)	(40)	(38)		58.1	
Lead	11.7	0.655*	330	432	3242	132.8	130	18.9	5532	1162	0.577*	202.1	574	150
Lithium	(18)			(25)	(32)	(78.2)					(18)		(5.0)	
Magnesium	0.388*	(0.8)*	(1.0)*	1.707*	6690	0.990*	(0.01)	1.51*	0.853*	1.05*	0.533*	0.59*	0.26*	1.200*
Manganese	234.5	786	505	1000	651	1757	1734	538	1.01*	638	462		(300)	544
Mercury	(0.04)		3.4	0.367	0.29	0.4474	0.474	1.4	32.6	6.25	0.71	3.64	1.10	
Molybdenum	(1.8)					10.8	(11)	(2)	(19)	(1.6)	(11)	46.7	10.07	
Neodymium	(15)			26.4	(25)	(56)	(72)	(19)	(23)	(31)	(28)			
Nickel	22.5	82	76.1	(75)	(36)	75.4	(75)	88	14.3	20.6	(12)	80.2	154.1	42.9
Niobium				(6)	(14)	(63)	(63)				(18)			
Nitrogen												4.78*		
Phosphorus	0.027*			1001	970	0.1552*	(0.16)	0.062*	0.106*	0.086*	427	2.42*	0.50*	
Potassium	0.864	1.05*	1.6*	0.976*	1.583*	2.054*	0.0208	2.03*	2.11*	2.45*	3.38*	0.49*	0.32*	2.001*
Praseodymium				(7.3)										
Rubidium	(38)	(52)	75			127.7	130	(96)	(120)	(110)	(175)		(23)	
Samarium		(4.4)		(6.1)		(10.8)	(10.8)	(3.8)	(7.8)	(5.9)			(1.3)	
Scandium	(5)	(7)	10.2	(24)	(11)	25.9	25.95	(12)	(8.7)	(9)	(23)		(3.4)	11.26
Selenium	0.193	27	1.4	(0.6)		4.95	4.9	1.57		1.52	(5)	16.0	0.44	
Silicon	40.0*		31*	29.15*	33.13*			29.66*	28.97*	30.44*		5.1*	(20.3)*	
Silver	(<0.3)	(6)	6.4			0.622	(0.59)	0.41	35.3	4.63	(27)	98	30.6	
Sodium	0.741*	0.425*	1.9*	0.468*	1.127*	0.681*	0.00693	1.16*	1.14*	1.14*	0.221*	0.21*	1.30*	0.553*
Strontium	(68)			84.1	126	119.7	118	231	(330)	245.3	217			
Sulfur	0.352*	(5.0)*				(1.5*)		0.089*	0.240*	0.042*	1.263*		(0.2)*	
Tantalum													(0.73)	
Terbium				(0.09)							(0.58)		(0.48)	
Tellurium											(5)			
Thallium	(< 0.5)		0.59			0.8267	(0.83)	0.74	(1.3)	2.47	(5)			
Thorium	(5.8)	(7.4)	(13)	(7)	(7.5)	20.51	20.22	(11)	(13)	(14)	(12)		(2.4)	9.07
Thulium				(0.5)							(0.4)			

Tin	(1)		42			31.6	32							
Titanium	0.456*	(0.40)*	4300	0.605*	3920	0.884*	0.0088	0.342*	0.283*	0.306*	0.699	0.32*	880	0.457*
Tungsten		(4.8)				(6.2)	(6.4)	(2)	(93)	(3)	(24)			
Uranium	(2)	5.5	(3.1)			(10.4)		(3)	(25)	(2.6)	(4)		(8.3)	3.09
Vanadium	44.84	127	100	(160)	(78)	357.6	360	112	76.6	81.6	268		80	94.6
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Ytterbium				2.64	(1.6)			(1.6)	(1.3)	(2.7)			(0.74)	
Yttrium				(21)	(15)			(18)	(23)	(25)			(10)	
Zinc	48.9	0.476*	656	352	335.8	485.3	480	106	6952	350.4	0.257*	1273	1254	408
Zirconium								(160)		(230)	(176)			
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Values in parentheses are given for information only.

** These SRMs also have noncertified leach data. The leach data for SRMs 2709, 2710, and 2711 are based on EPA Method 3050; the leach data for SRM 2781 and 2782 are based on EPA Methods 3050 and 3051.